Exhibit B

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Memorandum

Confidential
Attorney Work Product

To:	Kreindler & Kreindler
From:	Craig L. Moore, Ph.D.
Date:	October 26, 2003
Re:	Economic Loss of the Estate of Patrick Quigley

At your request, I have reviewed various documents related to estimating the economic damages accruing to the estate of Patrick Quigley as a result of his death on September 11th, 2001. The following analysis examines the economic damages based on the general framework used by the September 11th Victim Compensation Fund of 2001 ("VCF"). When available, specific facts about Mr. Quigley and his earnings and benefits are used, rather than the presumptions of The Fund.

Personal Background

Patrick Quigley was born on February 25, 1961 and was 40.54 years old on September 11, 2001 when he died. He was married to Patricia Quigley (born 2/19/64) with whom he had two children: Rachel (born 3/25/96) and Leah (born 10/15/01). They lived together in Wellesley, Massachusetts. He was born in Methuen, Massachusetts and raised by his parents, Patrick Quigley, Jr. and Mi Ja Kim Quigley in New Jersey. After completing high school in Willingsboro at Kennedy High School in 1978, he earned a bachelors degree in art history and business from the Rutgers University in 1982. He spent most of his professional career as a data storage specialist and was working for IBM in that capacity at the time of his death.

Work-life

The VCF approach begins by determining the expected work-life of the victim. The estimated work-life of an individual varies with a number of characteristics including their present age, education, and gender. The VCF estimate is based on a model of work-life developed by James Ciecka, Thomas Donley and Jerry Goldman.[1] The estimated economic damages presented here are based on the VCF estimate of work-life (61.4

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[1] "A Markov Process Model of Work-Life Expectancies Based on Labor Market Activity in 1997-98", Journal of Legal Economics, Vol. 9, no. 3, Winter 1999-00, pp. 33-68. I have extrapolated between the 5 - year brackets in the table provided by the VCF using a log linear regression and incorporated it into my model of the VCF computations. My results are virtually identical.

years) as well as on the work-life of male college graduates provided by the same study (65 years). A third estimate of economic damages is also provided to age 67 when social security benefits are typically maximized.

Employment and Earnings History

Patrick Quigley was a "data warehousing" specialist. He began his career with the State of New Jersey after college and worked as a Programmer/Analyst until 1984. He joined the Campbell Soup Company as a Software Analyst and remained there until 1987 when he took a position as a Systems Engineer at Strategic Resources, Inc. In 1989, he became a Senior Consultant with Codd and Date, Inc. until joining Price Waterhouse in 1990 as a Principal Consultant. In 1999 he was made a partner at what had become Price Waterhouse Coopers (PWC). IBM purchased the operation at PWC in September of 2002. The transition from a Partner at PWC to an employee at IBM would have involved complicated financial arrangements including stock option adjustments and significant changes in the way that benefits were handled.

Income tax returns indicate that Patrick Quigley's earnings were quite substantial. As a Partner at PWC, he was, in effect, part of an organization of people who had their own business operations. His K-1 schedule for Partner's Share of Income for 2000 shows $664,544 in regular income. The federal return for 2001 shows taxable income of $624,349. Documents from IBM show wealth accumulation projections that are based on a variety of assumptions. These include a 20% annual growth rate in IBM stock through 2007. Patrick Quigley may have chosen not to stay at IBM and go into business for himself with clients he served while he was a Partner at PWC or could have joined another company. He clearly had the professional background to command an income comparable to what he was earning at PWC. The estimated economic damages shown in this report are based on his actual earnings following his becoming a Partner at PWC in 1999 and assume that he would have maintained that earnings capacity whether he decided to stay at IBM after the 2002 purchase or pursue some other path in the business world. The income base used in this analysis is the adjusted net earnings from line 15a in the 2000 K-1 report from PWC.[2]

Earnings Growth Rate

The annual rate of growth in earnings used in this analysis is based on the table of growth rates provided by the VCF. The growth rate in each year is related to the projected age of the victim in that year had he lived. It varies from 5.18% at age 42 to 3% at age 53 and above.

Fringe Benefits

The value of fringe benefits is based on the formula provided by the VCF. The value of fringe benefits is equal to 4% of gross earnings plus $2,400 for medical coverage.

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[2] Note that there is a small adjustment of $6,531 in business interest that is deducted. The income base, therefore, is approximately $658,000.

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Unemployment Adjustment

Estimated future earnings and benefits are reduced by 3% in each year as prescribed by the VCF method as an adjustment for the possibility of unemployment.

Tax Liability

The economic damages are estimated net of income taxes. The VCF provides tax rates for victims that assume they are working in New York and paying the required city, state and federal taxes. These tax rates are less appropriate in this case as the decedent was a resident of Massachusetts, and filed taxes in several other states where he had clients as a partner at PWC. An analysis of actual tax records indicates that there is not a great difference in tax liability from the VCF rates. The tax rate applied in these computations is 30.39% of the decedent's earnings.

Personal Consumption

The VCF provides rates of personal consumption for the victim based household structure at the time of death. As each child reaches the age of 18, the rate of personal consumption is adjusted. These rates are used in the tables that accompany this report. They begin at 6.7% until Rachael reaches the age of 18 and then increases to 8.7% until Leah is emancipated. It then remains at 12.5%.

Value of Replacing Personal Contributions to the Household

Patrick Quigley reportedly spent a significant amount of time providing personal services to his household and was very involved in spending time with his children. His wife had a baby just after his death and he would have been spending time helping with a new infant and taking care of his younger daughter.

The most reliable research available shows that the contribution of a male working full-time in a household where one spouse works full-time varies with the age of the youngest child and the number of children in the family.[3] The contribution of Patrick Quigley is shown in a table that accompanies this report. Patrick Quigley reflects a husband that is more involved in household activities e than average. It begins at 15 hours per week and is adjusted as the youngest child and the number of children at home changes. The replacement cost of his contribution is valued at an average of $15 per hour based on the cost of hiring semi-skilled workers for maintenance, professional financial management, and other costs for household contributions. The estimated present value of his contribution to age 72 is equal to $ 204,870 based on this data and wage rate. The computations are shown in a table that accompanies this report.

Present Value

The estimate of economic damages is reduced to present value based on the discount rates provided by the VCF. Discounting for earnings and benefits is done

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[3] See "Household Labor in Hours by Family Type", David Ciscel and David Sharp, *Journal of Forensic Economics*, 8(2), 1995, pp 115-123.

monthly with the payment assumed at the end of the month. The annual discount rate used in this analysis is 3.9% that is specified for individuals 36 years of age or older. This rate is used for the entire analysis as specified by the VCF and does not vary with time.

Offsets

Economic Damages are reduced by any payments received by the victim's family from Workers Compensation, Social Security, or insurance death benefits. In this case, the following amounts shown in Table 2 were received from collateral sources:[4]

Value of Offsets to Economic Damages
Table 2.

Source	Amount
Life Insurance	$ 4,400,000
Workers Comp (Present Value)	-
Social Security (Present Value)	542,000
Total	$ 4,942,000

Summary of Damages

The following table shows the damages arising from the death of Patrick Quigley based on the VCF loss framework. Actual information has been used for some elements in the analysis when available rather than generalized figures provided by the VCF. There are three estimates of economic loss based on three work-life estimates. The amount used for collateral offsets does not vary. Neither does the present value of replacement services or the value of stock options. The other elements in the analysis are related to the work-life. The final estimates of the total economic loss range from over $5 million at age 60.32 using the VCF work-life to approximately $7.5 million at age 67 when retirement benefits are maximized.

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[4] The final payments to the Mrs. Quigley will be calculated as of the date of final settlement.

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Summary of Damages

Present Value of:		Assumed Retirement Age				
		61.32		65		67
Net Lost Future Earnings	$	8,758,692	$	10,179,337	$	10,934,232
Lost Employee Benefits		587,655		686,324		738,383
Replacement Services		204,870		204,870		204,870
Total		9,551,217		11,070,531		11,877,485
Less Collateral Offsets		4,942,000		4,942,000		4,942,000
Net Economic Damages		4,609,217		6,128,531		6,935,485
Non-Economic Losses		550,000		550,000		550,000
Net Claim	$	5,159,217	$	6,678,531	$	7,485,485

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As of September 11, 2001

Present Value of Economic Damages to the Estate of Patrick Quigley

Based on AALL Method of Loss Computations

Victim's Name	Patrick Quigley		
Victim's age		40.544	
Victim's Income	$	658,000	
Marital Status		Married	
Dependents		2	
	Children		
Rachel Quigley		3/25/1996	
Emancipated		3/25/2014	
Leah Quigley		10/15/2001	
Emancipated		10/15/2019	
	Estimated Work-life		
Years Remaining		20.78	
Age at Retirement		61.32	

AGE	YEAR	COMPENSATION Amount	Growth	BENEFITS	UNEMPL	GROSS	TAXES Rate	Amount	CONSUMPTION Rate	Amount	LOSS	PRESENT VALUE
41	2001	$ 101,467.00		$ 6,458.68	$ 3,237.77	$ 104,687.91	0.3039	$ 29,851.86	0.067	$ 4,581.28	$ 70,254.76	$ 70,254.76
42	2002	692,077.82	0.0518	30,083.11	21,664.83	700,496.10	0.3039	203,738.51	0.067	31,267.19	465,490.41	465,490.41
43	2003	726,536.37	0.0498	31,461.45	22,739.93	735,257.89	0.3039	213,883.74	0.067	32,824.15	488,550.01	485,795.28
44	2004	761,257.55	0.0478	32,850.30	23,823.24	770,284.61	0.3039	224,106.29	0.067	34,392.98	511,785.35	491,473.93
45	2005	796,115.53	0.0458	34,244.62	24,910.80	805,449.35	0.3039	234,369.12	0.067	35,967.99	535,112.25	494,250.94
46	2006	830,985.39	0.0438	35,639.42	25,998.74	840,626.06	0.3039	244,635.44	0.067	37,543.55	558,447.09	496,106.17
47	2007	865,737.20	0.0418	37,029.49	27,083.00	875,683.69	0.3039	254,867.01	0.067	39,113.74	581,702.93	497,031.41
48	2008	900,228.17	0.0398	38,409.13	28,159.12	910,478.18	0.3039	265,021.78	0.067	40,672.17	604,784.23	497,019.02
49	2009	934,310.81	0.0379	39,772.43	29,222.50	944,860.74	0.3039	275,056.34	0.067	42,212.14	627,592.26	496,066.75
50	2010	967,833.88	0.0359	41,113.36	30,268.42	978,678.82	0.3039	284,926.14	0.067	43,726.85	650,025.84	494,177.69
51	2011	1,000,653.13	0.0339	42,426.13	31,292.38	1,011,786.88	0.3039	294,588.73	0.067	45,209.73	671,988.42	491,365.07
52	2012	1,032,613.99	0.0319	43,704.56	32,289.56	1,044,028.99	0.3039	303,998.59	0.067	46,653.83	693,376.57	487,642.59
53	2013	1,063,502.41	0.0300	44,943.70	33,256.08	1,075,280.02	0.3039	313,119.21	0.067	48,053.55	714,107.27	483,043.12
54	2014	1,095,500.18	0.0300	46,220.01	34,251.61	1,107,468.58	0.3039	322,513.44	0.067	49,495.25	735,459.89	478,488.41
55	2015	1,128,365.19	0.0300	47,534.61	35,276.99	1,140,622.80	0.3039	332,189.50	0.087	66,198.19	742,235.11	464,455.28
56	2016	1,162,216.14	0.0300	48,888.65	36,333.14	1,174,771.64	0.3039	342,155.84	0.087	68,184.26	764,431.54	460,077.49
57	2017	1,197,082.63	0.0300	50,283.31	37,420.98	1,209,944.95	0.3039	352,421.17	0.087	70,229.92	787,293.86	455,742.18
58	2018	1,232,995.10	0.0300	51,719.80	38,541.45	1,246,173.46	0.3039	362,994.47	0.087	72,336.95	810,842.05	451,448.91
59	2019	1,269,984.96	0.0300	53,199.40	39,695.53	1,283,488.83	0.3039	373,884.96	0.087	74,507.19	835,096.68	447,197.21
60	2020	1,308,084.51	0.0300	54,723.38	40,884.24	1,321,923.65	0.3039	385,102.16	0.125	110,262.26	826,559.22	425,722.18
61	2021	673,663.52	0.0300	29,346.54	21,090.30	681,919.76	0.3039	198,317.00	0.125	56,782.03	426,820.73	213,498.45

Present Value of Economic Damages to the Estate of Patrick Quigley

As of September 11, 2001

Based on XX Method of Loss Computation

Victim's Name	Patrick Quigley	
Victim's age	40.544	
Victim's Income	$ 658,000	
Marital Status	Married	
Dependents	2	
Children		
Rachel Quigley	3/25/1996	
Emancipated	3/25/2014	
Leah Quigley	10/15/2001	
Emancipated	10/15/2019	
Estimated Work-life		
Years Remaining	24.46	
Age at Retirement	65.00	

AGE	YEAR	COMPENSATION Amount	Growth	BENEFITS	UNEMPL.	GROSS	TAXES Rate	Amount	CONSUMPTION Rate	Amount	LOSS	PRESENT VALUE
41	2001	$ 101,467.00		$ 6,458.68	$ 3,237.77	$ 104,687.91	0.3039	$ 29,851.86	0.067	$ 4,581.28	$ 70,254.76	$ 70,254.76
42	2002	692,077.82	0.0518	30,083.11	21,664.83	700,496.10	0.3039	205,738.51	0.067	31,267.19	465,490.41	465,490.41
43	2003	726,536.37	0.0498	31,461.45	22,739.93	735,257.89	0.3039	213,883.74	0.067	32,824.15	488,550.01	485,795.28
44	2004	761,257.55	0.0478	32,850.30	23,823.24	770,284.61	0.3039	224,106.29	0.067	34,392.98	511,785.35	491,473.93
45	2005	796,115.53	0.0458	34,244.62	24,910.80	805,449.35	0.3039	234,369.12	0.067	35,967.99	535,112.25	494,250.94
46	2006	830,985.39	0.0438	35,639.42	25,998.74	840,626.06	0.3039	244,635.44	0.067	37,543.53	558,447.09	496,106.17
47	2007	865,737.20	0.0418	37,029.49	27,083.00	875,683.69	0.3039	254,867.01	0.067	39,113.74	581,702.93	497,031.41
48	2008	900,228.17	0.0398	38,409.13	28,159.12	910,478.18	0.3039	265,021.78	0.067	40,672.17	604,784.23	497,019.02
49	2009	934,310.81	0.0379	39,772.43	29,222.50	944,860.74	0.3039	275,056.34	0.067	42,212.14	627,592.26	496,066.75
50	2010	967,833.88	0.0359	41,113.36	30,268.42	978,678.82	0.3039	284,926.14	0.067	43,726.83	650,025.84	494,177.69
51	2011	1,000,653.13	0.0339	42,426.13	31,292.38	1,011,786.88	0.3039	294,588.73	0.067	45,209.73	671,988.42	491,365.07
52	2012	1,032,613.99	0.0319	43,704.56	32,289.56	1,044,028.99	0.3039	303,998.59	0.067	46,653.83	693,376.57	487,642.59
53	2013	1,063,592.41	0.0300	44,943.70	33,256.08	1,075,280.02	0.3039	313,119.21	0.067	48,053.55	714,107.27	483,043.12
54	2014	1,095,500.18	0.0300	46,220.01	34,251.61	1,107,468.58	0.3039	322,513.44	0.067	49,495.25	735,459.89	478,488.41
55	2015	1,128,365.19	0.0300	47,534.61	35,276.99	1,140,622.80	0.3039	332,189.50	0.087	66,198.19	742,235.11	464,455.28
56	2016	1,162,216.14	0.0300	48,888.65	36,353.14	1,174,771.64	0.3039	342,155.84	0.087	68,184.26	764,431.54	460,077.49
57	2017	1,197,182.63	0.0300	50,283.31	37,420.98	1,209,944.95	0.3039	352,421.17	0.087	70,229.92	787,293.86	455,742.18
58	2018	1,232,995.10	0.0300	51,719.80	38,541.45	1,246,173.46	0.3039	362,994.47	0.087	72,336.95	810,842.05	451,448.91
59	2019	1,269,984.96	0.0300	53,199.40	39,695.53	1,283,488.83	0.3039	373,884.96	0.087	74,507.19	835,096.68	447,197.21
60	2020	1,308,084.51	0.0300	54,723.38	40,884.24	1,321,923.65	0.3039	385,102.16	0.125	110,262.26	826,559.22	425,722.18
61	2021	1,347,327.04	0.0300	56,293.08	42,108.60	1,361,511.52	0.3039	396,655.88	0.125	113,570.32	851,285.32	421,713.42

Household Contribution

	Value	P.V.	Age		Youngest	Kids			
0	11,700.00	11,700.00	41	2001	0	2	rate	$	15.00
0	11,700.00	11,700.00	42	2002	1	2			
1	11,700.00	10,431.32	43	2003	2	2			
2	11,700.00	10,039.77	44	2004	3	2			
3	11,700.00	9,662.91	45	2005	4	2			
4	11,700.00	9,300.21	46	2006	5	2			
5	9,360.00	7,160.89	47	2007	6	2			
6	9,360.00	6,892.10	48	2008	7	2			
7	9,360.00	6,633.40	49	2009	8	2			
8	9,360.00	6,384.40	50	2010	9	2			
9	9,360.00	6,144.76	51	2011	10	2			
10	9,360.00	5,914.11	52	2012	11	2			
11	7,800.00	4,743.43	53	2013	12	2			
12	7,800.00	4,565.38	54	2014	13	2			
13	7,800.00	4,394.01	55	2015	14	1			
14	7,800.00	4,229.08	56	2016	15	1			
15	7,800.00	4,070.34	57	2017	16	1			
16	7,800.00	3,917.55	58	2018	17	1			
17	7,800.00	3,770.50	59	2019	18	1			
18	11,700.00	5,443.46	60	2020					
19	11,700.00	5,239.13	61	2021					
20	11,700.00	5,042.48	62	2022					
21	11,700.00	4,853.20	63	2023					
22	11,700.00	4,671.03	64	2024					
23	11,700.00	4,495.70	65	2025					
24	11,700.00	4,326.95	66	2026					
25	11,700.00	4,164.53	67	2027					
26	11,700.00	4,008.21	68	2028					
27	11,700.00	3,857.76	69	2029					
28	11,700.00	3,712.95	70	2030					
29	11,700.00	11,700.00	71	2031					
30	11,700.00	11,700.00	72	2032					
		204,869.55							

Present Value of Social Security Benefits as of April 2003

Year	January	February	March	April	May	June	July	August	September
	1	2	3	4	5	6	7	8	9
2001									3,276.00
2002	3,276.00	3,276.00	3,276.00	3,276.00	3,276.00	3,276.00	3,276.00	3,276.00	3,276.00
2003	3,276.00	3,276.00	3,276.00	3,276.00	3,276.00	3,276.00	3,276.00	3,265.39	3,254.81
2004	3,212.84	3,202.43	3,192.06	3,181.72	3,171.41	3,161.13	3,150.89	3,140.69	3,130.51
2005	3,090.15	3,080.13	3,070.16	3,060.21	3,050.30	3,040.42	3,030.57	3,020.75	3,010.96
2006	2,972.14	2,962.51	2,952.91	2,943.35	2,933.81	2,924.31	2,914.83	2,905.39	2,895.98
2007	2,858.64	2,849.38	2,840.14	2,830.94	2,821.77	2,812.63	2,803.52	2,794.44	2,785.39
2008	2,749.47	2,740.56	2,731.68	2,722.83	2,714.01	2,705.22	2,696.46	2,687.72	2,679.02
2009	2,644.47	2,635.90	2,627.37	2,618.85	2,610.37	2,601.91	2,593.49	2,585.08	2,576.71
2010	2,543.48	2,535.24	2,527.03	2,518.84	2,510.68	2,502.55	2,494.44	2,486.36	2,478.31
2011	2,446.35	2,438.43	2,430.53	2,422.65	2,414.80	2,406.98	2,399.18	2,391.41	2,383.67
2012	2,352.93	2,345.31	2,337.71	2,330.14	2,322.59	2,315.06	2,307.56	2,300.09	2,292.64
2013	2,263.07	2,255.74	2,248.44	2,241.15	2,233.89	2,226.65	2,219.44	2,212.25	2,205.09
2014	2,176.65	2,169.60	2,162.57	1,437.04	1,432.39	1,427.75	1,423.12	1,418.51	1,413.92
2015	1,395.68	1,391.16	1,386.66	1,382.16	1,377.69	1,373.22	1,368.78	1,364.34	1,359.92
2016	1,342.39	1,338.04	1,333.70	1,329.38	1,325.08	1,320.78	1,316.50	1,312.24	1,307.99
2017	1,291.12	1,286.94	1,282.77	1,278.62	1,274.47	1,270.34	1,266.23	1,262.13	1,258.04
2018	1,241.82	1,237.79	1,233.78	1,229.79	1,225.80	1,221.83	1,217.87	1,213.93	1,210.00
2019	1,194.39	1,190.52	1,186.67	1,182.82	1,178.99	1,175.17	1,171.37	1,167.57	1,163.79
2020	574.39	572.53	570.68	568.83	566.98	565.15	563.32	561.49	559.67
2021	552.46	550.67	548.88	547.10	545.33	543.56	541.80	540.05	538.30
2022	531.36	529.64	527.92	526.21	524.51	522.81	521.11	519.43	517.74
2023	511.07	509.41	507.76	506.12	504.48	502.84	501.21	499.59	497.97
2024	491.55	489.96	488.37	486.79	485.21	483.64	482.07	480.51	478.95
2025	472.78	471.25	469.72	468.20	466.68	465.17	463.66	462.16	460.66

October	November	December	Total
10	11	12	
3,276.00	3,276.00	3,276.00	13,104.00
3,276.00	3,276.00	3,276.00	39,312.00
3,244.27	3,233.76	3,223.28	39,153.50
3,120.37	3,110.26	3,100.19	37,874.50
3,001.21	2,991.49	2,981.80	36,428.13
2,886.60	2,877.25	2,867.93	35,037.00
2,776.36	2,767.37	2,758.40	33,698.99
2,670.34	2,661.69	2,653.07	32,412.08
2,568.36	2,560.04	2,551.75	31,174.31
2,470.28	2,462.28	2,454.30	29,983.81
2,375.94	2,368.25	2,360.58	28,838.77
2,285.21	2,277.81	2,270.43	27,737.47
2,197.94	2,190.82	2,183.72	26,678.21
1,409.34	1,404.77	1,400.22	19,275.88
1,355.52	1,351.13	1,346.75	16,453.01
1,303.75	1,299.53	1,295.32	15,824.70
1,253.96	1,249.90	1,245.85	15,220.38
1,206.08	1,202.17	1,198.27	14,639.13
1,160.02	578.13	576.26	12,925.70
557.86	556.05	554.25	6,771.20
536.56	534.82	533.08	6,512.61
516.07	514.39	512.73	6,263.91
496.36	494.75	493.15	6,024.70
477.40	475.86	474.31	5,794.62
459.17	457.68	456.20	5,573.34
			542,711.96

Table 1.

Income	Tax Rate
10,000	0.0527
20,000	0.0850
25,000	0.1046
30,000	0.1225
35,000	0.1403
40,000	0.1472
45,000	0.1541
50,000	0.1610
60,000	0.1727
70,000	0.1844
80,000	0.1950
90,000	0.2055
100,000	0.2160
125,000	0.2500
150,000	0.2635
175,000	0.2770
200,000	0.2905
225,000	0.3039

Table 3.

Age	Growth Rate
18	0.09744
19	0.09580
20	0.09419
21	0.09263
22	0.09055
23	0.08847
24	0.08640
25	0.08434
26	0.08227
27	0.08021
28	0.07816
29	0.07611
30	0.07406
31	0.07201
32	0.06997
33	0.06794
34	0.06591
35	0.06388
36	0.06185
37	0.05983
38	0.05781
39	0.05580
40	0.05379
41	0.05179
42	0.04979
43	0.04779
44	0.04579
45	0.04380
46	0.04182
47	0.03984
48	0.03786
49	0.03588
50	0.03391
51	0.03194
52	0.03000

Table 4.

Income	Single	Single/1 child
$ 10,000	0.764	0.216
20,000	0.746	0.216
25,000	0.735	0.216
30,000	0.716	0.216
35,000	0.680	0.206
40,000	0.644	0.197
45,000	0.635	0.19
50,000	0.626	0.183
60,000	0.617	0.178
70,000	0.608	0.174
80,000	0.535	0.151
90,000	0.480	0.137
100,000	0.480	0.137
125,000	0.480	0.137
150,000	0.480	0.137
175,000	0.480	0.137
200,000	0.480	0.137
225,000	0.480	0.137

Income	Married	Married/1 child	Married;/2 children
$ 10,000	0.307	0.190	0.136
20,000	0.283	0.176	0.128
25,000	0.267	0.169	0.125
30,000	0.267	0.169	0.125
35,000	0.247	0.159	0.118
40,000	0.228	0.149	0.111
45,000	0.205	0.136	0.102
50,000	0.183	0.124	0.094
60,000	0.178	0.121	0.091
70,000	0.174	0.118	0.089
80,000	0.145	0.099	0.076
90,000	0.125	0.087	0.067
100,000	0.125	0.087	0.067
125,000	0.125	0.087	0.067
150,000	0.125	0.087	0.067
175,000	0.125	0.087	0.067
200,000	0.125	0.087	0.067
225,000	0.125	0.087	0.067

Table 2.

Age	Years Remaining
25	33.63
30	29.36
35	25.04
40	20.78
45	16.65
50	12.64
55	8.97
60	5.97
65	4.20

Table 5.
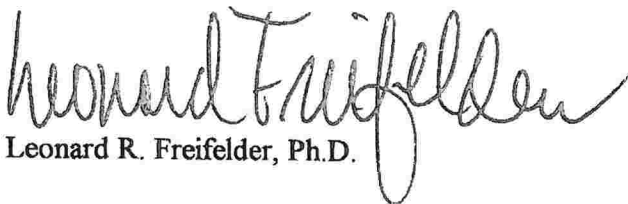
Age of Victim	Gross Rate	Net Rate
1	0.051	0.042
36	0.048	0.039
55	0.042	0.034

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1350 Avenue of the Americas, 29th Floor
New York, NY 10019

Analysis of Economic Loss
in the Matter of

Estate of Tyler V. Ugolyn

Leonard R. Freifelder, Ph.D.

April 20, 2006

Freifelder & Associates Consulting, Inc.

Analysis of Economic Loss
in the Matter of

Estate of Tyler V. Ugolyn

April 2006

1. Introduction

This report analyzes the economic loss of the Estate of Tyler V. Ugolyn. Mr. Ugolyn

died on September 11, 2001. The economic loss is the present value of projected past and

future lost earnings and retirement benefits.

2. Background

Tyler V. Ugolyn was born on August 7, 1978. On September 11, 2001, he was 23.10

years old. Mr. Ugolyn was working as a Research Associate at Fred Alger Management, Inc.

("Fred Alger") when he died. Tyler V. Ugolyn had joined this company on July 2, 2001.

Mr. Ugolyn graduated from Columbia University with a Bachelor's Degree in

Economics in 2001. I have been informed that he planned to enroll in an MBA program after

gaining a few years of practical experience in his chosen field of financial analysis.[1] In

September 2001, Tyler V. Ugolyn was single. His home was in Ridgefield, Connecticut,

although he also he had an apartment in New York, New York.

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[1]   The economic loss estimates in this report do not include any amount for the expected
increase in Tyler V. Ugolyn's earnings (and retirement benefits) as a result of obtaining an
MBA degree.

-1-

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3. Date of Loss and Life Expectancy

a. Date of Loss

Mr. Ugolyn died on September 11, 2001. Accordingly, I have assumed that the economic loss began on that date.

b. Life Expectancy

Based on Tyler V. Ugolyn's age on the date of loss, his life expectancy was 53.20 years, or to age 76.30 in the year 2054 (Arias E. United States life tables, 2002. National vital statistics reports; vol 53, no 6. Hyattsville, Maryland: National Center for Health Statistics. 2004.).

c. Worklife Expectancy

If Mr. Ugolyn had not died on September 11, 2001, I have assumed that he would have worked to age 67 in the year 2045. The Social Security full (benefit) retirement age for a person born in 1978 is 67 years old (2006 Social Security and Medicare, A Professional's Reference, Donna A. Clements, B.A. and Robert J. Myers, M.S. LL.D., F.S.A., Mercer Human Resource Consulting, Inc., November 2005).

4. Earnings Capacity

Tyler V. Ugolyn's salary as a Research Associate at Fred Alger on the date of loss was $50,000 per year plus a guaranteed (minimum) bonus of $10,000 (2001 dollars) (March 6, 2001 letter from RuthAnn Holberg, Director, Human Resources, Fred Alger Management, Inc. to Mr. Tyler Ugolyn). This level of earnings is approximately double the average amount earned by full time employed 18-24 year old males with a Bachelor's degree, $32,598 per year (2003 dollars), according to the U.S. Census Bureau publication PINC-04. Educational

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Attainment -- People 18 Years Old and Over by Total Money Earnings in 2003, Age, Race, Hispanic Origin, and Sex (U.S. Census Bureau, Current Population Survey, 2004 Annual Social and Economic Supplement, unpublished table available at http:pubdb3.census.gov/ macro/ 032004/perinc/new04_010.htm). Based on Mr. Ugolyn's 2001 earnings and the expected increases in his compensation that are discussed in the January 7, 2004 letter written by Daniel C. Chung, President, Fred Alger Management, Inc., I have estimated Tyler V. Ugolyn's earnings capacity from the date of loss to the end of his worklife as two times (2x) the U.S. Census Bureau's earnings estimates for full time employed males with a college degree for each age range from 18-24 years old to 65-69 years old.

5. Retirement Benefits

Fred Alger has a 401(k) retirement savings plan into which the company's employees can contribute 1% to 10% of their earnings each year. Fred Alger matches 100% of the contributions that its employees make to this retirement plan (Alger Associates, Inc. & Subsidiaries, Employee Handbook, January 2001). To estimate the economic value of Mr. Ugolyn's retirement benefits, I have assumed that he would have contributed 5.00% of his expected earnings to the retirement plan and that the company would have matched these contributions on a dollar-for-dollar basis. Accordingly, the 5.00% rate has been used to estimate the economic value of the matching retirement plan contributions that Tyler V. Ugolyn would have received from January 1, 2002 to the end of his worklife.

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6. Income Taxes

Mr. Ugolyn would have paid federal, state, and local income taxes on his earnings and retirement benefits. Based on data from the Statistical Abstract of the United States: 2006 (U.S. Census Bureau, 125th edition, Washington, DC, 2005), I have estimated the amount of these taxes as 30.00% of Tyler V. Ugolyn's earnings and retirement benefits. I have subtracted 30.00% from my estimates of his earnings and retirement benefits to account for income taxes.

7. Personal Maintenance Expenditures

Personal maintenance expenditures represent the monies that Mr. Ugolyn would have spent on himself after September 11, 2001. These expenses include the cost of utilities and other household expenses, apparel, health care expenditures, etc. Government statistics and studies of personal consumption show that such expenditures depend on household size and income level.[2] Based on data from the Consumer Expenditure Survey, 2002-03 (U.S. Department of Labor, Bureau of Labor Statistics, unpublished tables available at http://bls.gov/cex/) and other information, I have estimated Tyler V. Ugolyn's personal consumption as 16.08% of his earnings and retirement benefits, after subtracting income taxes. To account for personal consumption, I have subtracted this percentage from my after-tax estimates of his earnings and retirement benefits.

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[2]   See, for example, Robert T. Patton and David M. Nelson, "Estimating Personal Consumption Costs in Wrongful Death Cases," Journal of Forensic Economics, 4(2), 1991, pp. 233-240; Walter K. Lierman, Robert T. Patton and David M. Nelson, "Patton-Nelson Personal Consumption Tables Updated," Journal of Forensic Economics, 11(1), 1998, pp. 3-7; or, Michael R. Ruble, Robert T. Patton and David M. Nelson, "Patton-Nelson Personal Consumption Tables 2000-01: Updated and Revised," Journal of Forensic Economics, 15(3), 2002, pp. 295-301.

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8. Growth Rates

a. Earnings Capacity

Future (2004) growth in Mr. Ugolyn's earnings capacity has been estimated as 3.93% per year. This rate represents the average annual change from 1985 to 2005 in the wages and salaries of private industry workers who are employed in finance, insurance, and real estate occupations (Employment Cost Index -- June 2005, U.S. Department of Labor, Bureau of Labor Statistics, July 2005).

b. Retirement Benefits

The economic value of Tyler V. Ugolyn's retirement benefits (his employer's matching contributions) has been estimated as a percentage of Mr. Ugolyn's pretax earnings capacity. As such, Tyler V. Ugolyn's retirement benefits will grow at the same rate as his earnings.

c. Income Taxes

I have estimated Mr. Ugolyn's income tax payments as a percentage of his earnings and retirement benefits. These costs, therefore, will grow at the same rate as Tyler V. Ugolyn's earnings and retirement benefits.

d. Personal Maintenance Expenditures

Mr. Ugolyn's personal consumption costs also have been estimated as a percentage of his earnings and retirement income (after subtracting income taxes). These expenses will grow at the same rate as Tyler V. Ugolyn's earnings and retirement benefits.

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9. Discount Rate

In estimating the economic loss of the Estate of Tyler V. Ugolyn, the future (2007 on) year values of his earnings, retirement benefits, income taxes, and personal maintenance costs have been discounted to present value. The present value calculation recognizes that the resolution of this matter will involve a lump sum payment to the estate, money that can be invested to earn interest (investment income) in the future. To determine the present value of the estate's economic loss, I have used an interest rate of 4.66%, the current rate of interest on medium grade municipal bonds with maturities of 22 or more years (The Wall Street Journal, April 20, 2006).

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9. Tables

The following tables are attached to this report.

Table 1:   Estimated Loss of Earnings to Social Security Full Retirement Age.

Table 2:   Estimated Loss of Retirement Benefits to Social Security Full Retirement Age.

10. Summary

As indicated in the Summary Table, the past economic loss of the Estate of Tyler V. Ugolyn is $284,367. The estate's future economic loss is $3,454,252. The total economic loss is $3,738,619.

SUMMARY
OF ECONOMIC LOSS OF ESTATE OF
TYLER V. UGOLYN

ECONOMIC LOSS TO DECEMBER 31, 2006

EARNINGS	$271,248
RETIREMENT BENEFITS	$13,119
TOTAL	$284,367

ECONOMIC LOSS FROM JANUARY 1, 2007

EARNINGS	$3,289,764
RETIREMENT BENEFITS	$164,488
TOTAL	$3,454,252

TOTAL ECONOMIC LOSS

EARNINGS	$3,561,011
RETIREMENT BENEFITS	$177,607
TOTAL ECONOMIC LOSS	$3,738,619

TABLE 1   TYLER V. UGOLYN

ESTIMATED LOSS OF EARNINGS TO SOCIAL SECURITY FULL RETIREMENT AGE

Year	Age at End of Year	Estimated Earnings	Income Taxes	Personal Maintenance	Net Earnings	Present Value of Net Earnings
2001	23	$15,089	$4,527	$1,698	$8,864	$8,864
2002	24	$62,730	$18,819	$7,061	$36,850	$36,850
2003	25	$90,504	$27,151	$10,187	$53,165	$53,165
2004	26	$94,062	$28,219	$10,588	$55,255	$55,255
2005	27	$97,760	$29,328	$11,004	$57,428	$57,428
2006	28	$101,603	$30,481	$11,437	$59,685	$59,685
2007	29	$105,597	$31,679	$11,886	$62,032	$59,270
2008	30	$145,695	$43,709	$16,400	$85,587	$78,135
2009	31	$151,423	$45,427	$17,044	$88,951	$77,591
2010	32	$157,375	$47,213	$17,714	$92,448	$77,051
2011	33	$163,562	$49,069	$18,411	$96,082	$76,514
2012	34	$169,992	$50,998	$19,135	$99,860	$75,981
2013	35	$211,786	$63,536	$23,839	$124,411	$90,447
2014	36	$220,112	$66,034	$24,776	$129,302	$89,817
2015	37	$228,765	$68,629	$25,750	$134,385	$89,192
2016	38	$237,758	$71,327	$26,763	$139,668	$88,571
2017	39	$247,105	$74,131	$27,815	$145,159	$87,954
2018	40	$283,637	$85,091	$31,927	$166,619	$96,462
2019	41	$294,787	$88,436	$33,182	$173,169	$95,790
2020	42	$306,376	$91,913	$34,486	$179,977	$95,123
2021	43	$318,420	$95,526	$35,842	$187,052	$94,461
2022	44	$330,937	$99,281	$37,251	$194,405	$93,803
2023	45	$341,659	$102,498	$38,458	$200,704	$92,530
2024	46	$355,090	$106,527	$39,970	$208,594	$91,886
2025	47	$369,050	$110,715	$41,541	$216,794	$91,246
2026	48	$383,557	$115,067	$43,174	$225,316	$90,610
2027	49	$398,636	$119,591	$44,871	$234,174	$89,979
2028	50	$407,762	$122,329	$45,899	$239,535	$87,941
2029	51	$423,792	$127,137	$47,703	$248,951	$87,329
2030	52	$440,451	$132,135	$49,578	$258,738	$86,721
2031	53	$457,766	$137,330	$51,527	$268,909	$86,117
2032	54	$475,762	$142,729	$53,553	$279,480	$85,517
2033	55	$519,062	$155,719	$58,427	$304,917	$89,146
2034	56	$539,467	$161,840	$60,723	$316,903	$88,525
2035	57	$560,674	$168,202	$63,111	$329,361	$87,909
2036	58	$582,715	$174,815	$65,592	$342,309	$87,296
2037	59	$605,622	$181,687	$68,170	$355,766	$86,688
2038	60	$585,306	$175,592	$65,883	$343,831	$80,050
2039	61	$608,315	$182,495	$68,473	$357,348	$79,493
2040	62	$632,229	$189,669	$71,165	$371,395	$78,939
2041	63	$657,083	$197,125	$73,963	$385,995	$78,389
2042	64	$682,914	$204,874	$76,870	$401,169	$77,843
2043	65	$708,507	$212,552	$79,751	$416,204	$77,165
2044	66	$736,359	$220,908	$82,886	$432,566	$76,627
2045	67	$459,184	$137,755	$51,687	$269,742	$45,656

TOTAL TO DECEMBER 31, 2006	$461,747	$138,524	$51,975	$271,248	$271,248

TOTAL FROM JANUARY 1, 2007 L SECURITY RETIREMENT	$15,504,290	$4,651,287	$1,745,194	$9,107,809	$3,289,764

TOTAL	$15,966,037	$4,789,811	$1,797,169	$9,379,057	$3,561,011

TABLE 2   TYLER V. UGOLYN

ESTIMATED LOSS OF RETIREMENT BENEFITS TO SOCIAL SECURITY FULL RETIREMENT AGE

Year	Age at End of Year	Est. Matching 401(k) Contrib.	Income Taxes	Personal Maintenance	Net Value of 401(k) Match	Present Value of Net Match
2002	24	$3,136	$941	$353	$1,842	$1,842
2003	25	$4,525	$1,358	$509	$2,658	$2,658
2004	26	$4,703	$1,411	$529	$2,763	$2,763
2005	27	$4,888	$1,466	$550	$2,871	$2,871
2006	28	$5,080	$1,524	$572	$2,984	$2,984
2007	29	$5,280	$1,584	$594	$3,102	$2,963
2008	30	$7,285	$2,185	$820	$4,279	$3,907
2009	31	$7,571	$2,271	$852	$4,448	$3,880
2010	32	$7,869	$2,361	$886	$4,622	$3,853
2011	33	$8,178	$2,453	$921	$4,804	$3,826
2012	34	$8,500	$2,550	$957	$4,993	$3,799
2013	35	$10,589	$3,177	$1,192	$6,221	$4,522
2014	36	$11,006	$3,302	$1,239	$6,465	$4,491
2015	37	$11,438	$3,431	$1,288	$6,719	$4,460
2016	38	$11,888	$3,566	$1,338	$6,983	$4,429
2017	39	$12,355	$3,707	$1,391	$7,258	$4,398
2018	40	$14,182	$4,255	$1,596	$8,331	$4,823
2019	41	$14,739	$4,422	$1,659	$8,658	$4,790
2020	42	$15,319	$4,596	$1,724	$8,999	$4,756
2021	43	$15,921	$4,776	$1,792	$9,353	$4,723
2022	44	$16,547	$4,964	$1,863	$9,720	$4,690
2023	45	$17,083	$5,125	$1,923	$10,035	$4,627
2024	46	$17,755	$5,326	$1,998	$10,430	$4,594
2025	47	$18,452	$5,536	$2,077	$10,840	$4,562
2026	48	$19,178	$5,753	$2,159	$11,266	$4,531
2027	49	$19,932	$5,980	$2,244	$11,709	$4,499
2028	50	$20,388	$6,116	$2,295	$11,977	$4,397
2029	51	$21,190	$6,357	$2,385	$12,448	$4,366
2030	52	$22,023	$6,607	$2,479	$12,937	$4,336
2031	53	$22,888	$6,866	$2,576	$13,445	$4,306
2032	54	$23,788	$7,136	$2,678	$13,974	$4,276
2033	55	$25,953	$7,786	$2,921	$15,246	$4,457
2034	56	$26,973	$8,092	$3,036	$15,845	$4,426
2035	57	$28,034	$8,410	$3,156	$16,468	$4,395
2036	58	$29,136	$8,741	$3,280	$17,115	$4,365
2037	59	$30,281	$9,084	$3,409	$17,788	$4,334
2038	60	$29,265	$8,780	$3,294	$17,192	$4,003
2039	61	$30,416	$9,125	$3,424	$17,867	$3,975
2040	62	$31,611	$9,483	$3,558	$18,570	$3,947
2041	63	$32,854	$9,856	$3,698	$19,300	$3,919
2042	64	$34,146	$10,244	$3,844	$20,058	$3,892
2043	65	$35,425	$10,628	$3,988	$20,810	$3,858
2044	66	$36,818	$11,045	$4,144	$21,628	$3,831
2045	67	$22,959	$6,888	$2,584	$13,487	$2,283
TOTAL TO DECEMBER 31, 2006		$22,333	$6,700	$2,514	$13,119	$13,119
TOTAL FROM JANUARY 1, 2007 TO SOCIAL SECURITY RETIREMENT		$775,214	$232,564	$87,260	$455,390	$164,488
TOTAL		$797,547	$239,264	$89,774	$468,510	$177,607

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DRAFT   Economic Report

To:	Brian J. Alexander, Esq.
From:	Craig L. Moore, Ph.D.
Date:	May 16, 2005
Re:	Estate of Chandler R. Chandler

Background

Chandler Keller was born on October 8th, 1971. He lived in Manhattan Beach, California with his wife Elizabeth. They were married in July of 2000 and had no children. Mr. Keller was murdered on September 11th, 2001 when the plane he was traveling on was hijacked and intentionally crashed into the Pentagon in Washington D.C. in an act of terrorism.

The focus of this report is to estimate the present value of the economic loss arising from the death of Chandler Keller. Each element in the analysis is explained in detail and all computations are provided in tables.

Earnings History

Chandler Keller graduated from Bishop Montgomery High School in Torrance, California in 1989. He then went to the University of Colorado and studied aerospace engineering and received a Bachelor of Science degree in 1993. His first full-time job was with Behmer Construction where he supervised the construction of residential properties between January of 1994 and August of 1996. In February 1996 he took a position with Freedom Surfaces supervising the fabrication and installation of solid surface countertops. In July of 1996 he was hired by Hughes Aircraft in production planning. He worked his way up the engineering ladder and by November of 2000 had become a Senior Staff Engineer in Test and Launch Operations. Hughes was purchased by Boeing from General Motors and he now was working for Boeing Satellite Systems. By the time he died, he had become a Senior Project Engineer with Boeing and had an annual base salary of $70,720.

Employee records from Boeing show his base salary from the time he was hired in July of 1996 until he died. His Salary history is shown in Table 1 below. To the right are annual figures showing the percent change in nominal salary, the consumer price index for all goods and services, the rate of inflation, and then the growth in salary of Mr. Keller net of inflation. It is clear that in real terms his earnings were increasing quickly.

Table 1.

Year	Salary	% Change	CPI	Cost of Living	Real Increase
1996	$ 42,900		156.9		
1997	44,980	4.85%	160.5	2.29%	2.55%
1998	47,580	5.78%	163.0	1.56%	4.22%
1999	54,080	13.66%	166.6	2.21%	11.45%
2000	67,600	25.00%	172.2	3.36%	21.64%
2001	70,720	4.62%	177.1	2.85%	1.77%

Employee Benefits

In addition to earnings, Chandler Keller also received employee benefits that were part of his compensation. His benefits included health insurance, flexible spending account for health costs, dental insurance, disability insurance, life insurance, 401(k) with 4% employer match, bonus and award payments, and a pension plan.[1] He also received paid time for vacations and personal time off. Some of these benefits were directly consumed by him and are not included in any financial loss. Health and dental coverage were extended to Mrs. Keller for 36 months (September of 2004) following his death.

Work-life Estimates

In this case, one has to assume a reasonable time horizon over which Chandler Keller would have continued to work had he not died. In the absence of any direct evidence, it is reasonable to assume that he had the opportunity and a financial incentive to work until at least age 65. That is the work-life expectancy used in this analysis.

Rate of Economic Growth, Prices, and Real Wages

In this case I have assumed that Chandler Keller's earnings would have followed a schedule provided by Boeing based on their succession plan, employee development plan and projected salary schedule. I have made adjustments for the cost of living from the time of his death to the present.

Personal Consumption

I asked Elizabeth Keller to provide information regarding changes in the household budget since the death of her husband. She indicated that her husband was a frugal man and lived an unpretentious lifestyle. They had only been married a short time when he was killed. They had no children and the basic expenses for his consumption are those for a male living in a household with a spouse. I found this information to be consistent with estimates commonly relied upon in published research. I have used the equations from the Patton-Nelson model to estimate the personal consumption of Chandler Keller in my analysis of damages because it is widely accepted as an objective model for personal consumption based on Department of Labor data.[2]

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[1] The pension plan is taken up in detail later in this report.
[2] See "Patton-Nelson Personal Consumption Tables Updated", *Journal of Forensic* Economics, by Lierman, Patton, and Nelson; Winter, 1998, 11(1), 3-7.

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Present Value

Once the value of lost future earnings, net of consumption, has been established, it must be reduced to present value. That is, one must determine how much money would have to be set aside and invested today to provide the future financial support that was lost in each period. The only element in calculating the present value that is uncertain is the net rate of return that will be earned on the funds that are invested for future use.

The courts have found that it is reasonable to use a real rate of return in the range of 1% to 3% that is net of taxes on the earnings. In 1983, the United States Supreme Court ruled in *Jones & Laughlin Steel Corp. v. Pfeifer* that 1% to 3% is an appropriate discount rate interval within which courts may operate without risk of reversal on appeal[3]. In this case, however, I am using a salary projection that includes the cost of living and thus, I have added a rate of inflation to this real rate. In my opinion a cost of living of 3% is a reasonable average annual rate to expect in the future and the nominal rate then is 5 %. This would be reasonable and is in line with the net rate of return on a combination of long and medium term securities as currently reflected in the financial markets[4].

Lost Economic Support

The method used to estimate the present value of economic damages is straightforward. The computations are shown in Table 2 and are based on the assumption that Chandler Keller would have experienced increases in earnings projected from figures provided by Boeing.

The first column in the table shows the year in which Mr. Keller could have worked to the age of 65. The second column indicates his age in each year. The third column contains his estimated salary he would have received had he lived.

The fourth column contains employee incentive payments that were expected. These are equal to one week's base salary and are part of the Boeing projections.

In the fifth column is the value of lost benefits. These include the 4% employer contributions to the 401(k) plan and health and dental insurance replacement value. These are added to arrive at the total loss.

Personal consumption is netted out based on the model and tables cited earlier. It automatically adjusts as income rises and household size is assumed to remain constant.

The final total given at the bottom of the table is over $ 2.3 million and represents the present value of net lost earnings that would accrue to the household. Present value calculations are done monthly and summed to show the annual amount in each year.

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[3] For a discussion of *Pfeifer* and related cases, see George, Simien & Culbertson, "The Courts and Inflation", *TRIAL*, July 1984, p22.

[4] In cases where the number of years taken into account is great, such as in this case, the discount rate used reflects the rate of return earned on a portfolio of short, medium and long term securities as the losses must be compensated over a variety of time horizons. No one interest rate or security is appropriate.

Present Value of Economic Damages
Resulting from the Death of Chandler Keller
Table 2.

Year	Age	Earnings	Bonus	Benefits	Total	Consumption	Net Loss	Present Value
2002	31	$ 73,902	$ 1,421	$ 5,513	$ 80,836	$ 14,110	$ 66,726	65,081.73
2003	32	77,228	1,485	5,649	84,362	14,364	69,997	64,949.83
2004	33	80,703	1,552	5,790	88,045	14,623	73,422	64,811.84
2005	34	84,335	1,622	5,938	91,895	14,887	77,009	64,668.92
2006	35	88,130	1,695	6,093	95,918	15,156	80,762	64,520.28
2007	36	96,701	1,860	6,442	105,003	15,740	89,264	67,841.09
2008	37	101,052	1,943	6,620	109,615	16,025	93,590	67,667.03
2009	38	105,600	2,031	6,805	114,436	16,316	98,121	67,489.84
2010	39	110,351	2,122	6,999	119,472	16,612	102,860	67,306.24
2011	40	115,317	2,218	7,201	124,736	16,914	107,823	67,119.47
2012	41	120,507	2,317	7,413	130,237	17,222	113,015	66,927.86
2013	42	125,929	2,422	7,634	135,985	17,535	118,450	66,732.03
2014	43	131,596	2,531	7,865	141,992	17,855	124,137	66,532.31
2015	44	137,518	2,645	8,107	148,270	18,180	130,089	66,328.71
2016	45	143,706	2,764	8,359	154,829	18,512	136,317	66,121.04
2017	46	150,173	2,888	8,622	161,683	18,850	142,833	65,909.84
2018	47	164,777	3,169	9,218	177,164	19,584	157,580	69,175.34
2019	48	172,192	3,311	9,520	185,023	19,943	165,080	68,940.97
2020	49	179,941	3,460	9,836	193,237	20,308	172,929	68,703.73
2021	50	188,038	3,616	10,166	201,820	20,680	181,140	68,463.21
2022	51	196,500	3,779	10,511	210,790	21,059	189,731	68,219.91
2023	52	205,343	3,949	10,872	220,164	21,446	198,718	67,973.70
2024	53	214,583	4,127	11,248	229,958	21,839	208,119	67,724.55
2025	54	224,239	4,312	11,642	240,193	22,240	217,953	67,472.52
2026	55	234,330	4,506	12,053	250,889	22,649	228,241	67,218.35
2027	56	244,875	4,709	12,483	262,067	23,065	239,002	66,961.83
2028	57	255,894	4,921	12,933	273,748	23,489	250,259	66,702.86
2029	58	267,410	5,142	13,402	285,954	23,921	262,033	66,441.87
2030	59	279,443	5,374	13,893	298,710	24,361	274,349	66,178.77
2031	60	292,018	5,616	14,405	312,039	24,810	287,230	65,913.74
2032	61	305,159	5,868	14,941	325,968	25,266	300,702	65,646.67
2033	62	318,891	6,133	15,501	340,525	25,732	314,793	65,378.13
2034	63	333,241	6,408	16,086	355,735	26,206	329,529	65,107.54
2035	64	348,237	6,697	16,697	371,631	26,689	344,942	64,835.75
2036	65	363,908	6,998	17,336	388,242	27,181	361,061	64,562.33

Total $ 2,331,629.82

Lost Future Pension Payments

The pension plan for Boeing would have provided income beginning at age 65 and continuing until the normal life expectancy of 76 based on actuarial tables used by the Social Security Administration.[5] Table 3 contains the computations to determine the present value of annual pension payments net of Mr. Keller's consumption. The net loss is then reduced to present value using a net real discount rate of 2%. The actual

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[5] "Period Life Table 2001". Available at http://www.ssa.gov/OACT/STATS/table4c6.html.

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computations are made monthly and summed for each year. The present value of the estimated pension loss is approximately $825,251.

Present Value of Lost Pension Benefits
Table 5.

Year	Age	Benefit	Consumption	Net Loss	Present Value
2037	66	$ 175,290.78	$ 19,497.51	$ 155,793.27	$ 82,669.10
2005	67	175,290.78	19,497.51	155,793.27	81,048.14
2006	68	175,290.78	19,497.51	155,793.27	79,458.96
2007	69	175,290.78	19,497.51	155,793.27	77,900.94
2008	70	175,290.78	19,497.51	155,793.27	76,373.47
2009	71	175,290.78	19,497.51	155,793.27	74,875.95
2010	72	175,290.78	19,497.51	155,793.27	73,407.79
2011	73	175,290.78	19,497.51	155,793.27	71,968.43
2012	74	175,290.78	19,497.51	155,793.27	70,557.28
2013	75	175,290.78	19,497.51	155,793.27	69,173.80
2014	76	175,290.78	19,497.51	155,793.27	67,817.45
Total					$ 825,251.31

Estimated Value of Lost Household Services

In addition to lost support from employment, there is also a loss of household services such as maintenance, yard work, snow removal, financial management, cleaning, cooking, and other contributions made by Chandler Keller prior to his death.

The most reliable and widely recognized studies estimate the number of hours per year that a person spends working in the home based on the size of the household, its structure, the employment status of the adult members, and the age of the youngest child.[6] In this case, the Keller family had two adults who worked full-time and all of their children were emancipated. Table 4 shows the computations that are involved using the estimated hours of work for a male in this situation. The first column shows the year. The second column indicates the number of hours Chandler Keller would have been reasonably expected to work on household services had he been alive in that year. The third column places a dollar value on those hours using an average real value of $15.00 per hour. The final column shows the present value of that value in each year. These computations cover the period fro the time of Mr. Keller's death in 2001 until he would have reached the age of 72. The present value of those lost services is estimated at over $168,300.

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[6] David H. Ciscel and David C. Sharp, *Journal of Forensic Economics*, 8(2), 1995, pp. 115-123.

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Present Value of Lost Household Services
Table 4

Year	Age	Hours	Value	Present Value
2002	31	372	5,580.00	5,580.00
2003	32	372	5,580.00	5,580.00
2004	33	372	5,580.00	5,580.00
2005	34	372	5,580.00	5,580.00
2006	35	372	5,580.00	5,580.00
2007	36	372	5,580.00	5,580.00
2008	37	372	5,580.00	5,580.00
2009	38	372	5,580.00	5,580.00
2010	39	372	5,580.00	2,486.32
2011	40	372	5,580.00	4,954.88
2012	41	372	5,580.00	4,857.73
2013	42	372	5,580.00	4,762.48
2014	43	372	5,580.00	4,669.09
2015	44	372	5,580.00	4,577.54
2016	45	372	5,580.00	4,487.79
2017	46	372	5,580.00	4,399.79
2018	47	372	5,580.00	4,313.52
2019	48	372	5,580.00	4,228.94
2020	49	372	5,580.00	4,146.02
2021	50	372	5,580.00	4,064.73
2022	51	372	5,580.00	3,985.03
2023	52	372	5,580.00	3,906.89
2024	53	372	5,580.00	3,830.28
2025	54	372	5,580.00	3,755.18
2026	55	372	5,580.00	3,681.55
2027	56	372	5,580.00	3,609.36
2028	57	372	5,580.00	3,538.59
2029	58	372	5,580.00	3,469.21
2030	59	372	5,580.00	3,401.18
2031	60	372	5,580.00	3,334.49
2032	61	372	5,580.00	3,269.11
2033	62	372	5,580.00	3,205.01
2034	63	372	5,580.00	3,142.17
2035	64	372	5,580.00	3,080.56
2036	65	372	5,580.00	3,020.15
2037	66	372	5,580.00	2,960.93
2038	67	372	5,580.00	2,902.88
2039	68	372	5,580.00	2,845.96
2040	69	372	5,580.00	2,790.15
2041	70	372	5,580.00	2,735.45
2042	71	372	5,580.00	2,681.81
2043	72	372	5,580.00	2,629.22
Total				$ 168,363.99

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Results of the Analysis

Based on the forgoing analysis, it is my opinion to a reasonable degree of economic certainty that the present value of the net economic loss arising from the death of Chandler Keller is over $3.3 million. This estimate does not include any compensation for emotional loss, loss of consortium, or emotional distress. Nor does it include funeral expenses associated with the death of Chandler Keller. I reserve my right to supplement this opinion in a timely fashion should any new information be made available.

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Economic Report

To:	Brian Alexander, Esq.
From:	Craig L. Moore, Ph.D.
Date:	April 8, 2005
Re:	Estate of Richard Gabrielle

Background

Richard Gabrielle was born on December 14th, 1950. He lived in West Haven, Connecticut with his wife Monica (DOB 12/31/51) with whom he had a daughter Nicole (DOB 7/7/78. On September 11th, 2001, Mr. Gabrielle died during the terrorist attack on the World Trade Center in New York where he worked.

The focus of this report is to estimate the present value of the economic loss arising from the death of Richard Gabrielle. Each element in the analysis is explained in detail and all computations are provided in tables.

The Basis for Economic Damages

Economic damages are based on the concept of *opportunity cost*. When a person dies, the surviving members of the household are deprived of the opportunity to receive the income and support the deceased provided. In addition, the estate is deprived of the opportunity to accrue further wealth from savings and investments the decedent would have made. The resulting damages are equal to the cost of restoring that lost opportunity or providing what would have reasonably been the fruits of exercising it. In this case, the decedent, Richard Gabrielle, can no longer provide the earnings or household services for his family that he did prior to his death or continue to contribute to the value of his estate. In addition, there are personal damages, such as the loss of companionship and emotional distress. These are impossible to assess in an accounting sense and are typically left to the common judgment of a jury. Economic damages, on the other hand, can be reasonably estimated and evaluated using methods that are regularly employed in economics and recognized by the courts.

Evidence of Lost Earnings

Richard Gabrielle graduated from Stony Brook University with a BA in Sociology in 1976. He attended St. John's University between 1983 and 1985 where he took graduate courses in Finance. He began his career with Liberty Mutual Insurance as a

claims adjuster in 1977. He joined Marsh & McLennan in New York in 1979 and continued to work there as a Casualty Team Leader until the summer of 1985. He then became a Senior Casualty Broker with Corroon & Black in Stamford, Connecticut during 1985 and 1986. He then moved to Johnson & Higgins in Stamford where he was an Account Manager and Casualty Team Leader. In 1991 he became a Senior Marketing Officer with the Hobbs Group in Greenwich, Connecticut. He joined Alexander & Alexander in 1992 and continued working there after they were acquired by Aon Risk Services. At the time of his death he was an Account Executive and Senior Casualty Broker with Aon.

A letter dated April 23, 2003 from Kathy M. Hildenbrand, Director of Human Resources at Aon, includes a summary of the employment history of Richard Gabrielle including his earnings prior to his death. That letter indicates that Mr. Gabrielle's base salary at the time of his death was $102,268.98 per year. It also indicates that his salary had increased by 3% each year since 1997.

Employee Benefits

In addition to earnings, Richard Gabrielle also received employee benefits that were part of his compensation. His benefits included health insurance, dental insurance, pension contributions, employer contributions to a savings plan, disability insurance, life insurance, and paid vacation, sick days and other time away from work.

Aon continues to provide health insurance for Monica Gabrielle. Life insurance is no longer relevant as a benefit to her. The benefits lost to the estate include pension contributions and contributions to the employee savings plan. According to the employee records from Aon, the employer contribution to the savings program had been about $5,300 per year. The value of lost pension benefits will be addressed in a separate section of this report.

Work-life Estimates

In this case, one has to assume a reasonable time horizon over which Richard Gabrielle would have continued to work had he not died. In the absence of any direct evidence, it is reasonable to assume that he had the opportunity and a financial incentive to work until at least age 65. That is the work-life expectancy used in this analysis.

Rate of Earnings Growth and Inflation

In this case I have assumed that Richard Gabrielle's earnings would have continued to grow at a nominal rate of 3% per year. This is greater than the cost of living as reflected in the consumer price index (CPI) during those years. His salary history is shown in Table 1 below based on Aon records. The rate of growth is shown in the third column. The following two columns show the CPI in each year and the rate of inflation. The final column calculates the net difference between Richard Gabrielle's salary growth and the rate of inflation. The real growth (net of inflation) for each year is then averaged. The analysis shows that the average real rate of growth in his salary was about .41%.

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